

CHAS Affordability Analysis

Paul Joice

U.S. Department of Housing and Urban Development, Office of Policy Development and Research,
Program Evaluation Division

Paul.A.Joice@hud.gov

Abstract

This working paper presents analysis of custom tabulations of the 2006-2010 American Community Survey (ACS), known as the "CHAS data." The CHAS data combine ACS microdata with HUD adjusted median family incomes (HAMFI) to create estimates of the number of households that would qualify for HUD assistance. Using these data, I estimate the number of rental units and ownership units that would be available to prototypical households at specified income levels.

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Introduction

In 1990, Congress passed the National Affordable Housing Act, which required that State and local governments participating in selected HUD grant programs prepare a Comprehensive Housing Affordability Strategy (CHAS). The CHAS was meant to serve as the strategic guide for housing and community development activities, particularly activities funded by HUD grants and targeted to low- and moderate-income households (Hoben and Richardson, 1992). To support this analysis, HUD and The Census Bureau produced custom tabulations of the 1990 Census that provided grantees with information about the housing needs of low- and moderate-income households. As a planning document, the CHAS was superseded in 1995 by the Consolidated Plan, but the custom tabulations of Census data continue to be known as the "CHAS data." The CHAS data were updated following the Census 2000, and in 2009 they were updated to rely on the American Community Survey (ACS), the Census Bureau's new annual survey that replaced the long form of the decennial Census.

The CHAS data combine ACS microdata with HUD adjusted median family incomes (HAMFI) to create estimates of the number of households that would qualify for HUD assistance. The CHAS data also incorporate household characteristics (such as race/ethnicity, age, family size, disability status) and housing unit characteristics (such as number of bedrooms and rent/owner costs). These characteristics are combined into a series of cross-tabulations (also referred to as tables), each of which has a particular focus. This paper presents analysis of one particular component of the 2006-2010 CHAS data: a series of tables that estimate the affordability of the housing stock and the extent to which affordable units are available to lower income households.

Tables 14A and 14B provide information about affordability and number of bedrooms, specifically for vacant units; 14A includes units that are vacant for sale, and 14B includes units that are vacant for rent. Tables 15A, 15B, and 15C provide similar information for occupied housing units, and also incorporate the income of the current occupants. Table 15A includes owner-occupied units with a mortgage, Table 15B includes owner-occupied units without a mortgage, and Table 15C includes renter-occupied units. In all five of these tables, units that lack complete kitchen and plumbing facilities are excluded from the analysis; nationwide, these units constitute 2,082,355 out of a total of 120,684,570 units that were occupied or being marketed for rent or sale (see Table 1).

Table 1: Number of units by tenure, nationwide, 2006-2010 ACS

Tenure	Number of units
Vacant for rent	1,908,975
Vacant for sale	3,312,570
Owner occupied with a mortgage	52,042,300
Owner occupied without a mortgage	24,936,090
Renter occupied	38,484,635
Total, occupied or for-rent/for-sale	120,684,570

One dimension of these tables, number of bedrooms, is straightforward. Table 2 presents the nationwide distribution of units by number of bedrooms, from the 2006-2010 ACS.

Table 2: Number and of bedrooms, nationwide, 2006-2010 ACS

Number of bedrooms	Number of units	Percent of total units
No bedroom	2,393,262	1.80%
1 bedroom	14,724,146	11.30%
2 bedrooms	35,368,566	27.20%

3 bedrooms	51,750,610	39.80%
4 bedrooms	20,550,334	15.80%
5 or more bedrooms	5,251,162	4.00%
Total housing units	130,038,080	100%

The exact specifications of the variables for affordability and household income require further examination. The remainder of this paper explains how HUD calculates the income and affordability variables used in the CHAS, then presents resulting estimates of the stock of affordable housing.

Household Income

The essential characteristic of the CHAS data is the combination of ACS microdata and HUD adjusted median family incomes (HAMFI). The HAMFI estimates used in the CHAS are slightly different from the official income limits produced by HUD to govern program eligibility. The official income limits are trended forward to the fiscal year in which they are effective. The 2006-2010 ACS income estimates are trended forward to December 2011 using the consumer price index, and then trended forward an additional 15 months (to the middle of fiscal year 2013) based on changes in income over the 2006-2010 period. These adjustments are not necessary for the production of the CHAS data; the CHAS data use HAMFIs calculated from the 2006-2010 ACS, with no trend update, compared to household incomes from the 2006-2010 ACS. Official income limits are also adjusted so that the 80% income limit cannot exceed the U.S. median, and are then adjusted further to reflect high housing costs in certain jurisdictions. The HAMFIs used for the CHAS data undergo these same adjustments. The implications of these adjustments are discussed further in a subsequent section.

Like the official income limits, HAMFIs are computed for counties, county equivalents (also referred to as minor civil divisions, or MCDs), and Fair Market Rent (FMR) areas. These mutually exclusive geographic units cover the entire country, so each household has one—and only one—relevant HAMFI. Each household in the ACS microdata is matched with the appropriate HAMFI and classified based on how their income compares to specific HAMFI thresholds. The most relevant thresholds are 50% and 80% of HAMFI, because most HUD programs base eligibility on these thresholds (which are generally referred to as "very low-income" and "low-income," respectively). HAMFI thresholds are calibrated for a 4 person household and are adjusted up (by 8% for each person above 4) or down (by 10% for each person below 4) based on the number of people in each household. For example, in Lexington-Fayette County, KY, 80% of HAMFI for a 4 person household is \$48,000. For a 3 person household, 80% of HAMFI is \$43,200 ($\$48,000 * .9$), so a 3 person household with household income of \$43,000 would be below the 80% HAMFI threshold and would be considered "low-income." Table 3 presents nationwide totals for the number of households in various categories (the categories are cumulative—"low-income" includes "very low-income" and "extremely low-income" households).

Table 3: Household income as a percentage of HAMFI, nationwide, 2006-2010 CHAS¹

Income category	Number of households	Percent of total households
Extremely low-income (≤ 30% of HAMFI)	14,562,140	12.61%
Very low-income (≤ 50% of HAMFI)	28,016,320	24.27%
Low-income (≤ 80% of HAMFI)	46,977,040	40.69%
Low- & middle-income (≤ 100% of HAMFI)	58,842,215	50.96%

¹ Some of these terms are defined in HUD regulations, but their usage can vary by program. The terms used in Table 3 (such as "low-income" and "extremely low-income") are used throughout this report as shorthand for the corresponding HAMFI thresholds identified in Table 3.

HAMFI)		
Upper income (> 100% of HAMFI)	56,620,815	49.04%
Total households	115,463,030	100%

Other analyses of the number of households in HUD-specified income categories tend to focus specifically on renters. Collinson (2011) uses ACS public use microsamples to estimate that there were 16.17 million very low-income renter households in 2007, and that the number rose to 17.84 million in 2009. According to HUD's Worst Case Housing Needs Report to Congress, the number of very low-income renter households was 15.94 million in 2007 and 17.12 million in 2009. The 2006-2010 CHAS data indicate that there were an average of 16.56 million very low-income renter households over the 2006-2010 period; this is consistent with other analyses.

Affordability

Household income is a dimension in most of the CHAS tables, but Tables 14 and 15 are distinguished from the other tables by incorporating a unique concept of affordability. These tables do not define affordability from the perspective of the current occupant of a home—in that framework, a home is considered affordable if a household is paying less than 30% of its income towards total housing costs. Other CHAS tables (such as Table 8) provide information on the prevalence of housing cost burden and severe housing cost burden. Analysis of cost burden and other severe housing problems is also the focus of HUD's Worst Case Housing Needs Report to Congress. By contrast, Tables 14 and 15 estimate whether a particular housing unit would be affordable to a generic household with income at the HAMFI thresholds of interest. The analysis presented in this paper focuses on the 50% and 80% thresholds.

To further clarify this concept of affordability, consider a hypothetical 1 bedroom unit that is vacant, for-rent, in Lexington-Fayette County, KY. The rental unit has an asking price (contract rent) of \$850 and utility costs have been estimated by the landlord (or imputed by The Census Bureau) at \$200, making the gross rent \$1,050. Is the unit affordable to a household with income at 80% of HAMFI, assuming a 30% payment standard for affordability? As mentioned previously, in Lexington the threshold for 80% of HAMFI is \$48,000 for a 4 person household. The unit would seem to be affordable to a household with income of \$48,000—the monthly payment of \$1,050 would be only 26% of the household's monthly income of \$4,000. However, \$48,000 is the 80% limit for a *4 person household*, and a 1 bedroom unit would be overcrowded if occupied by 4 people.² To prevent such a large misalignment between household size and unit size, Tables 14 and 15 adjust the income of the generic household based on number of bedrooms and household size. A 1 bedroom unit would be most appropriate for one or two people.³ As described previously, HUD adjusts HAMFIs for household size by subtracting 10% for each person less than 4 and adding 8% for each person greater than 4. For a 1 person household, the 4 person HAMFI is multiplied by 70%, and for a 2 person household the 4 person HAMFI is multiplied by 80%. Since a 1 bedroom unit might be appropriate for a 1 person or 2 person household, this analysis assumes that 75% is the appropriate factor for adjusting a 4 person HAMFI to match a 1 bedroom unit. With this in mind, the household income that should be used for this analysis is not \$48,000—it is \$36,000 (.75 * \$48,000), which could be understood as the annual income for a generic 1.5 person household with income at 80% of HAMFI. For this household, it turns out that the vacant 1 bedroom unit in question is *not* affordable—the monthly payment of \$1,050 is 35% of the \$3,000 monthly income of an appropriately sized household.

² HUD typically defines overcrowding as more than 1 person per room, but this example shows why a persons per *bedroom* standard might be more appropriate. If a 1 bedroom unit has a kitchen, living room, dining room, and office, 4 people could occupy the unit without exceeding 1 person per room; but those 4 people would have trouble finding a place to sleep with a single bedroom.

³ These adjustment factors are based on guidelines for the Low-Income Housing Tax Credit, which assume 1.5 persons per bedroom.

Table 4 presents the full spectrum of household size adjustments used to match units with household-size-adjusted incomes. For a 4 bedroom house, the 4 person household income threshold should be multiplied by 1.16. In Lexington, the 80% HAMFI threshold that would be applied to a 4 bedroom house is \$55,680. A 4 bedroom house would be considered affordable at the 80% HAMFI threshold if its gross rent were affordable to a household making \$55,680.

Table 4: Household size adjustment factors for estimating affordability

Number of bedrooms	Household income adjustment factor
0	0.70
1	0.75
2	0.90
3	1.04
4	1.16
5	$1.04 + (0.12 * (\text{number of bedrooms} - 3))$

This analysis must confront one further complication. For renter-occupied and vacant-for-rent units, the rent currently being charged should be close to the rent that would be charged if a new household were to move in to the unit.⁴ For owner-occupied units, however, the monthly owner costs paid by the current resident may be far different from a household seeking to purchase the same unit. Consider a household that purchased a home in 2000 for \$100,000, using a 30-year fixed rate mortgage with a 20% downpayment and a 5% interest rate. That household would have a monthly payment of approximately \$430. If another household purchased the same home in 2013 for \$150,000 with the same mortgage terms, they would have a monthly payment of approximately \$650. Clearly, a home might be affordable to its current occupant, but not to another household with the same income attempting to purchase it today. Home values are not the only factor that changes over time. According to Freddie Mac, in April, 2013, the prevailing rate for new fixed rate mortgages was approximately 3.5%. In 2001, the equivalent rate hovered around 7%.⁵ If interest rates decline significantly, the current occupant will not experience a decreased cost burden (unless they refinance), but new buyers will find higher levels of affordability. Estimates of cost burden that focus on the rents and mortgage payments currently experienced by households may under- or overreport the extent of affordability when the housing market undergoes significant changes in a short period of time. Tables 14 and 15 seek to estimate the affordability of the *housing stock independent of current occupants*. As a result, affordability of owner-occupied units is based on current values and current mortgage market conditions.

Affordability is typically calculated as a comparison of flows—monthly income to monthly housing costs. For this analysis, monthly housing costs are hypothetical—they are the costs that would result if a particular home were to be sold (which it is not). Thus, instead of comparing household income to monthly housing costs, this analysis compares household income to home value. While a 30% payment standard (housing costs to income ratio) is widely used for rental housing affordability, there is not such a clear consensus of the appropriate ratio of home price to household income. According to Zillow, a company which estimates home values and analyzes real estate trends, the ratio of home price to income hovered around 2.6 throughout most of the 1980s and 1990s. This ratio peaked at 4 in 2006, and has since dropped back to around 3.⁶ The owner affordability estimates in the CHAS data use a ratio of 3.36—that

⁴ Long-term leases and rent control regulations would undermine this assumption, but this analysis does not take those scenarios into account.

⁵ <http://www.federalreserve.gov/releases/h15/data.htm>

⁶ Information presented April 18, 2013 at the "Forum on the Future of Housing."

is, a household could afford to purchase a home if the home's value is less than or equal to 3.36 of the household's household-size-adjusted income. This factor is based on terms for FHA-insured mortgages: 31% monthly payment standard, 96.5% loan-to-value ratio, 5.5% interest rate, 1.75% upfront insurance premium, .55% annual insurance premium, and 2% annual taxes and hazard insurance.⁷

A second example illustrates how affordability is estimated for owner-occupied households. Once again, we use a 1 bedroom unit in Lexington-Fayette County, where 80% of HAMFI for a 4 person household is \$48,000. As with rental units, it is necessary to adjust the 80% HAMFI threshold for the household size that would be appropriate for a 1 bedroom unit. This value is \$36,000. Assume that the unit is owner-occupied, and that the owner estimates the value of the home at \$140,000. Using the affordability multiplier of 3.36, a household with income of \$36,000 could afford a 1 bedroom home up to \$120,960. This particular unit, at its current estimated value, is not affordable to an appropriately sized household making 80% of HAMFI. If the unit had two bedrooms instead of one, we would use \$43,200 as the household-size-adjusted income threshold ($\$48,000 * .9$). Because $43,200 * 3.36$ is \$145,152, a 2 bedroom unit valued at \$140,000 *would* be affordable at 80% of HAMFI.

Affordability Results

Based on the standards described above, Tables 5 and 6 present estimates of the affordability of the housing stock in 2006-2010. Information is presented for the United States (the 50 states, plus Washington, DC and Puerto Rico) as well as three specific jurisdictions: Washington, DC (a large city with high housing prices); Lexington-Fayette County, KY (a moderately sized urban county with moderate housing prices); and Harris County, TX (a large urban county with moderate housing prices).

Table 5: Rental affordability estimates for selected jurisdictions, 2006-2010 CHAS

	United States	Washington, DC	Lexington-Fayette County, KY	Harris County, TX
Rental units affordable at 50% HAMFI	15,366,595	76,110	25,720	199,710
Rental units affordable at 80% HAMFI	33,189,665	100,055	50,755	536,810
Renter occupied or vacant for-rent units	41,797,205	155,670	56,445	667,890

Nationwide, in 2006-2010, there were a total of 41.8 million housing units that were renter occupied or vacant for-rent. Of these, 37.8% were affordable to a household making 50% of HAMFI, and 79.4% were affordable to a household making 80% of HAMFI. Collinson (2011) analyzes public use microsamples from the ACS (2007 and 2009) and American Housing Survey (2007 and 2009) and finds similar levels of affordability for rental units.

In Washington, DC, the 76,110 rental units that would be affordable to households making 50% of HAMFI constitute nearly half of the rental stock. Lexington is slightly less affordable to a very low-income household; 45.5% of its rental units would be affordable to a household making 50% of HAMFI. Bringing up the rear is Harris County at 29.9%; which is surprising, given that Harris County (at the center of the Houston metropolitan area) is generally thought to be a housing market with ample supply and relatively low prices. A different picture emerges when one looks at the low-income (80%) threshold. Lexington and Harris County are both slightly more affordable than the nation as a whole—89.9% and 80.3%, respectively, of their rental units would be affordable to a household making 80% of HAMFI. In

⁷ This analysis was conducted in 2009 and has not been updated to reflect more current conditions, but current FHA terms remain similar.

Washington, DC, however, only 64.3% of rental units are affordable to a household making 80% of HAMFI.

There are two broad reasons why affordability at the 80% threshold might seem so different from affordability at the 50% threshold. First, it could be the result of actual market segmentation. Perhaps Washington, DC has a large number of very cheap rental units (possibly the result of subsidies) but few moderately priced rental units. Second, it could be a function of the way HUD computes HAMFIs and income limits. CHAS HAMFIs and HUD income limits are adjusted for household size (as discussed previously). In addition, for the official income limits (and for the HAMFIs used in the CHAS data), the U.S. median family income (\$60,600 in 2006-2010 CHAS HAMFIs) serves as a cap on the 80% HAMFI threshold. After being capped at the U.S. median and adjusted slightly upward for high housing costs, the 80% HAMFI threshold in Washington, D.C. was \$63,600 in the 2006-2010 CHAS. These adjustments demonstrate why it is important for users of the CHAS data to understand how HUD computes income limits and HAMFIs—they are not a simple percentage of the true median income.⁸ If users of the CHAS data are interested in estimating the population that is eligible for HUD assistance, it is appropriate to use median incomes with the adjustments HUD uses for income limits. If, on the other hand, users of the CHAS data are interested in describing the housing market more broadly, it might be more appropriate to use HAMFIs that do not include those adjustments.

Table 6 presents affordability of the stock of owner-occupied and vacant for-sale housing. These results are more consistent with conventional wisdom about the housing markets in the three selected jurisdictions. Nationwide, 21.8% of owner units were affordable to very low-income households, and 43.9% were affordable to low-income households. In Washington, DC, the corresponding figures are a paltry 5.2% and 8%. Lexington is relatively affordable to low-income households (56.4% of units), but less affordable to very low-income households (15.3% of units). In Harris County, 32.4% of owner units are affordable to very low-income households and 71.7% of owner units are affordable to low-income households.

Table 6: Owner affordability estimates for selected jurisdictions, 2006-2010 CHAS

	United States	Washington, DC	Lexington-Fayette County, KY	Harris County, TX
Owner units affordable at 50% HAMFI	17,195,805	6,050	10,760	263,725
Owner units affordable at 80% HAMFI	34,668,100	9,300	39,670	583,905
Owner occupied or vacant for-sale units	78,887,365	115,650	70,290	814,370

What is the cause of the extremely low level of owner affordability in Washington, DC? As with rental affordability, it reflects (at least to some extent) actual conditions in the DC housing market. Limited supply coupled with extraordinarily high demand drives up prices. According to the S&P/Case-Shiller Index, home values in the DC region fell 21% from December 2006 to December 2012, compared to 28% for a composite index of 20 cities.⁹ It may also be that the home price to income ratio of 3.36 is not equally valid in all areas; for whatever reason, homebuyers in DC may have reason to believe that they can afford to buy more expensive homes than an equally wealthy household in Lexington or Houston. The apparent lack of affordable homeownership opportunities in DC may also be partly a function of the

⁸ In the 2006-2010 ACS, with no adjustments by HUD, the median family income was \$70,883 in DC and \$62,982 in the United States. The median family size was 3.13 in DC and 3.17 in the United States.

⁹ Based on author's analysis of February 2013 seasonally adjusted Case-Shiller Home Price Index released by S&P.

process for creating HAMFIs and estimating affordability. As noted previously, the 80% HAMFI threshold for DC is reduced because it would otherwise exceed the U.S. median. Actual incomes in DC are higher than suggested by the 80% HAMFI threshold. Finally, the household size adjustment factors presented in Table 4 may also bias these affordability estimates. Nationwide, approximately 40% of housing units had two or fewer bedrooms in 2006-2010; in DC it was nearly 67%. Nationwide, only 27% of households have only one person; in DC it was 47%. If the household size adjustment factors presented in Table 4 excessively discount household income for smaller households, they would disproportionately affect the estimates of affordability in places like DC with above average shares of small households and small housing units.

Affordable and Available

The preceding sections discuss the affordability of the housing stock. It is also informative to analyze the extent to which affordable units are matched to the households that need them most. This section presents analysis of the number of units that are both affordable *and available* to low- and very low-income households, with "available" defined as vacant or occupied by a household with income less than or equal to the income threshold in question. Tables 7 and 8 present estimates of the number of units both affordable and available at the 50% and 80% income thresholds. Again, information is presented for the United States; Washington, DC; Lexington-Fayette County, KY; and Harris County, TX.

As expected, the number of units that are both affordable and available is consistently lower than the number of affordable units. Many units that would be affordable to a very low-income household are occupied by households with income above 50% of HAMFI, and many units that would be affordable to a low-income household are occupied by households with income above 80% of HAMFI. Nationwide, there were 5.6 million rental units that would be affordable to very low-income households, yet are occupied by households with higher income. Similarly, 9.5 million rental units would be affordable to low-income households, but are occupied by higher income households. As a result, the percentage of rental units affordable and available to very low-income and low-income households is 23.3% and 56.7%, respectively. A similar dynamic is evident in each of the three selected cities (see Tables 5 and 7).

Table 7: Affordable and available rental units, selected jurisdictions, 2006-2010 CHAS

	United States	Washington, DC	Lexington-Fayette County, KY	Harris County, TX
Rental units affordable and available at 50% HAMFI	9,726,025	54,245	15,920	140,165
Rental units affordable and available at 80% HAMFI	23,716,405	75,880	36,225	392,265
Renter occupied or vacant for-rent units	41,797,205	155,670	56,445	667,890

When looking at owner-occupied and vacant for-sale units, there is a more significant difference between "affordable" and "affordable and available." Of the 17.2 million owner housing units nationwide that are affordable to very low-income households, 71% are occupied by households with income above 50% of HAMFI. Of the 34.7 million owner housing units nationwide that are affordable to low-income households, 59% are occupied by households with income above 80% of HAMFI. Only 6.4% and 18.1% of owner units are affordable and available to households at 50% and 80% of HAMFI, respectively. There are a number of possible explanations for the fact that so few owner units are affordable and available to low-income households. Foremost among them is that, in 2006-2010, owner occupants had been living in their current unit much longer than renter occupants; 55% of owners moved into their unit prior to the year 2000, compared to only 16% for renters. This equates to significantly less

turnover of the owner-occupied housing stock. If incomes and home values change significantly, but households don't "re-sort" (move) to units that better fit their income, affordability mismatches result.

Table 8 presents estimates of affordable and available owner units for the United States and three selected cities. In Washington, DC, even at the 80% HAMFI threshold, only 4.5% of owner units are affordable and available. In the most affordable ownership market of the three cities, Harris County, only 25.7% of owner units are affordable and available to low-income households.

Table 8: Affordable and available owner units, selected jurisdictions, 2006-2010 CHAS

	United States	Washington, DC	Lexington-Fayette County, KY	Harris County, TX
Owner units affordable and available at 50% HAMFI	5,010,040	2,835	2,985	73,435
Owner units affordable and available at 80% HAMFI	14,253,195	5,175	13,075	209,415
Owner occupied or vacant for-sale units	78,887,365	115,650	70,290	814,370

Conclusion

This paper is meant to illuminate the process by which HUD and the Census Bureau produce the CHAS data—specifically the estimates of housing affordability in CHAS Tables 14 and 15. It also provides a framework for analyzing the data and provides some insights into the current level of rental and owner affordability. The methodology discussed in this paper is not the only way to analyze housing affordability. It is certainly important to analyze housing costs in relation to the income of current residents. And of course, it is not realistic to contemplate a large-scale re-shuffling of households so that household incomes are better matched to housing costs. Nonetheless, since this re-shuffling does occur naturally, it is useful to consider the extent to which the housing stock is affordable and available to households that are attempting to relocate.

The results provide support for common perceptions about housing affordability, nationally and in three particular markets. Nationwide, low- and very low-income households have more affordable housing opportunities in the rental market than in the ownership market. It is particularly remarkable how unaffordable and poorly sorted the ownership market is; many affordable units are occupied by higher income households, while lower income households are stuck in unaffordable situations. This suggests that other estimates of affordability might be understating the affordability crisis. Current owners who have locked in low interest rates and built up equity may be in an affordable housing situation, but other households hoping to purchase a home have extremely limited options available to them. In the supply constrained Washington, DC market, affordable homeownership opportunities are particularly scarce. Harris County, on the other hand, has a fair amount of moderately priced housing (particularly owner housing) but is relatively less affordable for very low-income renters.

These data, and the rest of the CHAS data, are available on PD&R's web site (<http://www.huduser.org/portal/datasets/cp.html>). HUD has also created extracts of the CHAS data tailored to support the Consolidated Planning process that is required of HUD grantees; these data extracts have been loaded into HUD's enterprise Geospatial Information System (eGIS) and support several recently developed analytic tools, including CPD Maps (<http://egis.hud.gov/cpdmaps/>) and the eCon Planning Suite (http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/about/conplan/cp_idis).

Local jurisdictions can use analysis such as this to substantiate anecdotal evidence about the affordability of their housing market, and to identify potential policy solutions.

HUD intends to work with the Census Bureau to update the CHAS data on an annual basis as new ACS estimates become available.

Questions and comments can be sent to the author at Paul.A.Joice@hud.gov. The data used to support this analysis is also available at the county level (summary level 050) by request.

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